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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,096	09/28/2000	Hsin-Chu Tsai	042390.P8829	9115

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EXAMINER

MONESTIME, MACKLY

ART UNIT

PAPER NUMBER

2676

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/675,096

Applicant(s)

TSAI ET AL.

Examiner

Mackly Monestime

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. Claims 1-24 are presented for examination.

Claim Rejections - 35 U.S.C. § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. As per claim 8, line 1 recites the limitation "the amplification". There is insufficient antecedent basis for this limitation in the claim.

5. As per claims 9-10, they are also rejected for incorporating the deficiencies of their base claim.

Claim Rejections - 35 U.S.C. § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIA (pre-AIA 35 U.S.C. 102(e)).

7. Claims 1-4, 6-8, 11-12, 14-16 and 20-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Tischler (US Patent No. 6,483,516).

8. As per claims 1-2, 11 and 20-21, Tischler disclosed the invention as claimed, including a computer system comprising a graphics core (Fig. 3, Item No.138); and a unified graphics cache coupled to the graphics core (Fig. 3, Item No.140, col. 8, lines 14-30) wherein the unified graphics cache stores texture data, color data and depth data (col. 6, lines 27-42).

9. As per claims 3 and 22, Tischler disclosed a central processing unit and a CPU cache coupled to the CPU core (Fig. 3, Items No. 136, 140).

10. As per claims 4 and 23, Tischler disclosed a bus interface coupled to the CPU cache and the graphics cache (Fig. 3, Item No. 142).

11. As per claim 6, Tischler disclosed a main memory coupled to the bus interface (Fig. 3, Item No. 104).

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12. As per claims 7-8, 12 and 14, Tischler disclosed that the graphics core amplifies polygons and renders the polygons into the graphics cache; and image polygons are implemented via viewport transformation (col. 1, lines 25-35).

13. As per claims 15-16, Tischler further disclosed that the process of rendering the polygons comprises: setting the image polygons and rasterizing pixels within the image polygons (col. 1, lines 31-35).

Claim Rejections - 35 U.S.C. § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 5, 19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tischler in view of Penna et al (US Patent No. 6,498,606).

16. As per claims 5, 19 and 24, Tischler did not explicitly disclose that the graphics core operates according to a tile based rendering architecture. However, the concepts and associated advantages of using a tile based rendering architecture are well known in the art. It can be evidenced in the reference by Penna et al in which a tile based rendering technique is used (col. 5, lines 23-29). It would have been obvious to a person of ordinary skill in the art at the time the

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invention was made to have utilized the tile based rendering architecture taught by Penna et al into the system of Tischler because doing so would provide greater design flexibility and efficiency by allowing different memory arrangement in a tile oriented operation, thereby enhance the processing speed of the graphics system.

17. Claims 9, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tischler in view of Pfister et al (US Patent No. 6,448,968).

18. As per claims 9, 13 and 17, Tischler did not disclose that the graphics core downsampling the image polygons after the polygons have been rendered. However, Pfister et al disclosed the use of a downsampling technique (col. 12, lines 2-10). Moreover, numerous downsampling methods are well known in the graphics art; for instance downsampling often refers to a sampling of the image data by a factor of two in both the horizontal and vertical directions. In addition, the downsampled pixel value of a block of pixels in an image may be the medium value of all pixels in

that block, wherein the block size is four pixels, which is typical, the values of the pixels in the block may be added together and divided by four. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have utilized the downsampling technique taught by Pfister et al into the system of Tischler because doing so would enhance the quality of the resulting image.

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19. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tischler in view of Pfister et al as applied to claims 1-9 and 11-17 above, in further in of view of Li et al (US Patent No. 5,860,060).

20. As per claims 10 and 18, the combination did not the downsampling of the image polygons are implemented by executing a bit aligned block transfer. However, the use of a bit aligned block transfer is well known in the graphics art. It can be evidenced in the reference by Li et al in which a bit blt hardware accelerator is used (col. 7, lines 19-20). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the cited references because doing so would provide high quality "antialiased" text and graphics without requiring the calculation of colors by the host processor.

Conclusion

Applicant is required to give full consideration to these prior art references when responding to this office action.

The prior arts made of record and not relied upon is considered pertinent to applicant's disclosure.

Nielsen et al (US Patent No. 6,104,417) taught a unified memory computer architecture with dynamic graphics memory allocation.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mackly Monestime whose telephone number is (703) 305-3855. The examiner can normally be reached on Monday to Thursday from 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached on (703) 308-6829.

Any response to this action should be mailed to:

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Washington, D.C. 20231

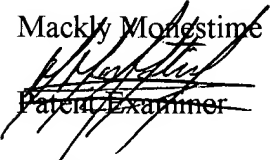
or faxed to:

(703) 872-9314 (for Technology Center 2600 only)


Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, Va, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Mackly Monestime


Patent Examiner

February 20, 2003


MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600